

**TECHNICAL REVIEW DOCUMENT**  
**for**  
**RENEWAL of OPERATING PERMIT 95OPMR081**

Public Service Company, Roundup Compressor Station  
Morgan County  
Source ID 0870030

Prepared by Jacqueline Joyce  
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Revised April 17, 2003 and June 2003

**I. Purpose:**

This document will establish the basis for decisions made regarding the applicable requirements, emission factors, monitoring plan and compliance status of emission units covered by the renewed operating permit proposed for this site. The original Operating Permit was issued March 1, 1998, and expires on March 1, 2003. This document is designed for reference during the review of the proposed permit by the EPA, the public, and other interested parties. The conclusions made in this report are based on information provided in the renewal application submitted February 1, 2002, additional technical information submitted on March 5 and June 11, 2003, comments on the draft permit and technical review document received May 23, 2003, previous inspection reports and various e-mail correspondence, as well as telephone conversations with the applicant. Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at <http://www.cdphe.state.co.us/ap/Titlev.html>.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

**II. Description of Source**

This facility is classified as a natural gas compression facility defined under Standard Industrial Classification 4922. This facility consists of three compressor engines for the storage, delivery, and transmission of natural gas.

The natural gas processing plant uses a refrigerant compressor engine, two triethylene glycol dehydrators and one liquified petroleum gas (LPG) glycol plant. Fugitive VOC emissions from equipment leaks are subject to New Source Performance Standards (NSPS). There is also a smart ash incinerator that can be moved to the Roundup facility to dispose of non-hazardous combustible waste.

Based on the information provided in the renewal application, no changes have been made to any of the significant emission units.

The source has not requested any changes to the insignificant activity list. However, it should be noted that revisions were made to Colorado Regulation No. 3, regarding condensate storage tanks and condensate truck loading equipment and those revisions took effect on December 30, 2002. Previously, under Regulation No. 3, certain size condensate storage tanks and condensate truck loading equipment meeting a specified throughput limit were exempt from APEN reporting and permitting requirements and were considered insignificant activities for Title V operating permit purposes. With the revisions to Colorado Regulation No. 3, only condensate storage tanks and condensate loading equipment at exploration and production (E & P) sites, meeting specified throughput limits are APEN exempt and insignificant activities. The insignificant activity list (Appendix A) in the current permit indicates that there are two condensate storage tanks. The source submitted information on May 23, 2003, indicating that one of the condensate storage tanks had been removed and that the other one was pressurized and therefore, emissions are below APEN de minimis levels. In addition, the source indicated that the condensate tank is equipped with a vapor return line, therefore, there any emissions from truck loading are returned to the pressurized condensate tank. Therefore, emissions from the condensate truck loading equipment are below APEN de minimis levels. Therefore, both the condensate storage tank and the condensate truck loading equipment can still be considered insignificant activities.

Under the federal Clean Air Act (the Act), EPA is charged with promulgating maximum achievable control technology (MACT) standards for major sources of hazardous air pollutants (HAPs) in various source categories by certain dates. Section 112(j) of the Act requires that permitting authorities develop a case-by-case MACT for any major sources of HAPs in source categories for which EPA failed to promulgate a MACT standard by May 15, 2002. These provisions are commonly referred to as the "MACT hammer".

Owners or operators that could reasonably determine that they are a major source of HAPs which includes one or more stationary sources included in the source category or subcategory for which the EPA failed to promulgate a MACT standard by the section 112(j) deadline were required to submit a Part 1 application to revise this operating permit by May 15, 2002. Based on the information provided by this source, the Roundup facility is a major source of

HAPs (i.e. facility-wide potential to emit of greater than 10 tons per year of any single HAP or greater than 25 tons per year of all HAPs combined) for a covered source category (reciprocating internal combustion engines) and did submit a Part 1 application to the Division prior to May 15, 2002. As of the date of issuance of this permit, a Part 2 application to revise this operating permit is due by April 28, 2004. That date, however, may be revised. Affected facilities that fail to submit a timely and complete application will be considered in violation and such violations may be subject to enforcement action.

Note that none of the emission units at this facility are equipped with control devices and therefore the Compliance Assurance Monitoring (CAM) requirements do not apply to these units.

The facility is located west of Wiggins, in Morgan County. The area in which the plant operates is designated as attainment for all criteria pollutants. There are no affected states within 50 miles of this facility and there are no federal class I areas within 100 km of this facility.

The summary of emissions that was presented in the Technical Review Document (TRD) for the original permit issuance has been modified to update actual emissions. Emissions (in tons per year) at the facility are as follows:

Pollutant	Potential to Emit –	Actual Emissions
NO <sub>x</sub>	163.6	82.8
CO	228.2	56.9
VOC	46.8	12.7
HAPS	9.5	3.8

The PTE for criteria pollutants shown above is based on permit limitations. PTE for HAPS is based on the information provided in the May 23, 2003 comments on the draft permit and technical review document and the additional information submitted on June 11, 2003. Actual emissions are based on the information in the Division's 2001 inventory.

### **III. Discussion of Modifications Made**

#### **Source Requested Modifications**

The source's requested modifications identified in the renewal application were addressed as follows:

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The Responsible Official was changed. In addition, the Responsible Official has designated an authorized representative to sign off on documents when she is not available for signature. This authorized representative has been identified in

the permit.

The permit contact was changed as indicated in the renewal application.

In addition, the SIC code has been changed from “4925” to “4922” and the primary activity has been changed from “natural gas compression, dehydration, processing and storage” to “natural gas compression and processing” as indicated in the renewal application.

### **Other Modifications**

In addition to the modifications requested by the source, the Division has included changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this renewal.

The Division has made the following revisions, based on recent internal permit processing decisions and EPA comments, to the Roundup Renewal Operating Permit with the source’s requested modifications. These changes are as follows:

### **Page following Cover Page**

- The citation (above “issued to” and “plant site location”) on the page following the cover page provides the incorrect title for the state act. The title will be changed from “Colorado Air Quality Control Act” to “Colorado Air Pollution Prevention and Control Act”. In addition, the reference to specific dates has also been removed.
- Monitoring and compliance periods and report and certification due dates are shown as examples. The appropriate monitoring and compliance periods and report and certification due dates will be filled in after permit issuance and will be based on the permit issuance date. Note that the source may request to keep the same monitoring and compliance periods and report and certification due dates as were provided in the original permit. However, it should be noted that with this option, depending on the permit issuance date, the first monitoring period and compliance period may be short (i.e. less than 6 months and less than 1 year).
- Added language specifying that the semi-annual reports and compliance certifications are due in the Division’s office and that postmarks cannot be used for purposes of determining the timely receipt of such reports/certifications.

### **General Information**

- Fixed the header. “Public Service Company” is the first line of the header

on the left hand side and “Roundup Compressor Station” is the second line of the header on the left hand side.

### Section I - General Activities and Summary

- Removed language in Condition 1.1 that indicated the relative population of Wiggins. This information is subject to change and is not necessary.
- Conditions 13 and 17 in Condition 1.4 were renumbered to 14 and 18 and Condition 21 in Condition 1.5 was renumbered to 22. The renumbering changes were necessary due to the addition of the Common Provisions requirements in the General Conditions of the permit.
- Added Conditions II.6.3.1 (particulate matter) and II.6.7 (NSPS general provisions) to the list of state-only requirements.
- The language for the alternative operating scenario for temporary engine replacement was updated to reflect current language.
- Minor language changes were made to Condition 3.1 to more appropriately reflect the status of the source with respect to PSD. Specifically, the Division removed the statement indicating that “modifications up to this point in time have not triggered significance levels which would bring about PSD review”, since EPA objected to this statement in their review of other Title V operating permits.
- Based on comments made by EPA on another operating permit, the phrase “Based on the information provided by the applicant” was added to the beginning of Condition 4.1.
- Removed condition 4.2 (112(r) certification) since the annual compliance certification has language regarding 112(r).
- Added a “new” Section 5 for compliance assurance monitoring (CAM), note that no emission units are subject to CAM.
- Added a “new” Section 6 for 112(j).

### Section II - Specific Permit Terms

#### Section II.1 – Ajax Engine (Refrigerant Compressor Engine)

- In their May 23, 2003 comments on the draft permit and technical review document, the source requested that AP-42 emission factors be used to monitor compliance with the emission limits and requested that the emission limits be increased to reflect the new emission factors.

The following emission factors will be used (from AP-42, Section 3.2, Table 3.2-1, dated July 2000, for 2-stroke lean burn engines):

NO<sub>x</sub> – 3.17 lbs/mmBtu (90 – 105% load)  
CO – 0.386 lbs/mmBtu (90-105% load)  
VOC – 0.120 lbs/mmBtu

The AP-42 NO<sub>x</sub> and CO emission factors are more conservative than the manufacturer's emission factors that are included in the current permit.

To accommodate the new emission factors, the source has requested the permitted emissions be revised to 26.4 tons/yr of NO<sub>x</sub>, 3.2 tons/yr of CO and 1 ton/yr of VOC emissions. Since the requested VOC emissions are below APEN de minimis levels, the VOC emissions will not be included in the permit, note however, that VOC emissions shall still be reported on APENS for payment of fees.

In addition, the source also requested that the fuel consumption rate be increased to 17.34 mmSCF/yr.

- Changed the equation in Condition 1.1 to calculate emissions in tons/mo rather than lbs/mo.
- Under "monitoring method" in Table for Condition 1.2, replaced "fuel meter" with "fuel meter and calculation".
- The opacity standard (Condition 1.4) was rewritten to more closely resemble the language in Regulation No. 1.
- Under "monitoring interval" in Table for Condition 1.4, replaced "annually" with "whenever natural gas is used as fuel" and under "Limitations" replaced "less than or equal to 20%" with "not to exceed 20%". These changes are more consistent with the language in the text of Condition 1.4.
- The following phrase "Public Service Company's operating experience" in Condition 1.5 was replaced with "good engineering practices" based on comments made by EPA on another operating permit.

Note that no condition is included for the 30% opacity standard, which is applicable during certain operating activities. The specific activities under which the 30% opacity standard applies are: building a new fire, cleaning of fire boxes, soot blowing, startup, any process modification, or adjustment or occasional cleaning of control equipment. Based on engineering judgement the Division considers that building a new fire, cleaning of fire boxes and soot-blowing does not apply to the operation of internal combustion engines. In addition, this engine does not have a control device, so adjustment or occasional cleaning of

control devices do not apply to this engine. Process modifications and startup may apply to engines, however, based on engineering judgement, the Division believes that such activities would be unlikely to occur for longer than six minutes. Therefore, the 30% opacity requirement has not been included in the operating permit.

#### Section II.2: Three (3) Waukesha Engines (compressor engines)

- Changed the equation in Condition 2.1 to get results in units of “tons/mo” rather than “lbs/mo”.
- AP-42 emission factors have been revised and the most recent AP-42 emission factors have been included in the permit to monitor compliance with the emission limitations. The emission factors that have been included in the renewal permit are from AP-42, Section 3.2, Table 3.2-3, dated July 2000, as follows:

NO<sub>x</sub> – 2.27 lbs/mmBtu (< 90% load), CO – 3.72 lbs/mmBtu (90 – 105% load) and VOC – 0.0296 lbs/mmBtu

In order to keep permitted emissions below the major stationary source level (250 tons/yr), the source requested in their May 23, 2003 comments on the draft permit that the fuel consumption limit be reduced to 125.9 mmSCF/yr and the emission limits be revised to the following:

NO<sub>x</sub> – 137.2 tons/yr, CO – 225 tons/yr and VOC – 1.8 tons/yr. Since the requested VOC emissions are below APEN de minimis levels, the VOC emissions will not be included in the permit, note however, that VOC emissions shall still be reported on APENS for payment of fees.

- Under “monitoring method” in Table for Condition 2.2, replaced “fuel meter” with “fuel meter and calculation”.
- The opacity standard (Condition 2.4) was rewritten to more closely resemble the language in Regulation No. 1.
- Under “monitoring interval” in Table for Condition 2.4, replaced “annually” with “whenever natural gas is used as fuel” and under “Limitations” replaced “less than or equal to 20%” with “not to exceed 20%”. These changes are more consistent with the language in the text of Condition 2.4.
- The following phrase “Public Service Company’s operating experience” in Condition 2.5 was replaced with “good engineering practices” based on comments made by EPA on another operating permit.

Note that no condition is included for the 30% opacity standard, which is

applicable during certain operating activities. The specific activities under which the 30% opacity standard applies are: building a new fire, cleaning of fire boxes, soot blowing, startup, any process modification, or adjustment or occasional cleaning of control equipment. Based on engineering judgement the Division considers that building a new fire, cleaning of fire boxes and soot-blowing does not apply to the operation of internal combustion engines. In addition, these engines do not have control devices, so adjustment or occasional cleaning of control devices do not apply to these engines. Process modifications and startup may apply to engines, however, based on engineering judgement, the Division believes that such activities would be unlikely to occur for longer than six minutes. Therefore, the 30% opacity requirement has not been included in the operating permit.

### Section II.3 – Triethylene Glycol Dehydrators

- Changed requirement in Condition 3.1 to calculate emissions using GRI GLYCalc Version 4.0 or higher.
- Added “quantity/source of stripping gas” as a parameter to be monitored in Condition 3.1.
- Under “monitoring interval” in Table for Condition 3.2, replaced “quarterly” with “semi-annually”.
- Under “monitoring method” in Table for Condition 3.4, replaced “flow meter” with “flow meter and calculation”.
- The following phrase “Public Service Company’s operating experience” in Condition 3.5 was replaced with “good engineering practices” based on comments made by EPA on another operating permit.

The source submitted an initial notification indicating that the facility was subject to the requirements in 40 CFR Part 63 Subpart HHH (Natural Gas Transmission and Storage MACT) and that the dehydrators were exempt from the control requirements under 40 CFR Part 63 Subpart HHH § 63.1274(d), because actual uncontrolled benzene emissions are less than 1 ton per year. In their May 23, 2003 comments on the draft permit, the source indicated that they had made some errors when these units were first permitted and that the potential to emit of HAPS from the facility was really below the major source level (10 tons/yr of any individual HAP and 25 tons/yr of combined HAPS). The Natural Gas Transmission and Storage MACT allows the potential to emit for glycol dehydrators to be based on maximum actual levels, rather than design levels. In the May 23, 2003 analysis, the source used the actual maximum values for the glycol circulation rate and the BTEX content of the gas to calculate emissions from the dehydrators, although they used the design natural gas processing rate (8760 hrs/yr and 25 mmSCF/day). However, the May 23, 2003 submittal did not include the actual average values for other GLYCalc parameters and the source

resubmitted their dehydrator emissions in their June 11, 2003 e-mail. In this analysis, the source used the maximum actual value for glycol recirculation rate and BTEX content of the gas, the average actual values for the other GLYCalc parameters, and the lower hours of operation as allowed by 40 CFR Part 63 Subpart HHH § 63.1270(a)(1). Based on the June 11, 2003, HAP emissions from the Roundup facility are below the major source level, therefore, the requirements in 40 CFR Part 63 Subpart HHH do not apply. However, since the facility is determined to be a minor source using the actual maximum gas throughput rate, rather than design, the provisions in 40 CFR Part 63 Subpart HHH § 63.1270(a)(3) to retain the maximum natural gas throughput rate and recalculate emissions if that value is exceeded have been included in the permit. These provisions are included in Section II as “new” Condition 7.

Note that although the facility has been determined to be a minor source for HAPS for purposes of the Natural Gas Transmission and Storage MACT, the source may still be subject to the case-by-case MACT provisions in Section 112(j) of the Clean Air Act. The facility has reciprocating internal combustion engines (RICE), which are one of the source categories for which EPA failed to promulgate MACT standards by the deadline and so the provisions in 112(j) potentially apply to the facility. The proposed rule for the RICE MACT in 40 CFR Part 63 Subpart ZZZZ does not appear to allow the potential to emit from the glycol dehydrators to be based on levels below design rate and at design rate, the facility would be major for HAPS. Therefore, the permit includes provisions for the case-by-case MACT requirements of 112(j).

#### Section II.4 – Ethylene Glycol Dehydrator

- Changed requirement in Condition 4.1 to calculate emissions using GRI GLYCalc Version 4.0 or higher.
- Added “cold separator temperature and pressure and flash tank temperature and pressure” as parameters to be monitored in Condition 4.1.
- Revised the references in Condition 4.3 to “general conditions 7 and 21” to “general conditions 8 and 22”. The renumbering changes were necessary due to the addition of the Common Provisions requirements in the General Conditions of the permit.
- Under “monitoring method” in Table for Condition 4.5, replaced “flow meter” with “flow meter and calculation”.
- Under “monitoring interval” in Table for Condition 4.2, replaced “quarterly” with “semi-annually”.
- The following phrase “Public Service Company’s operating experience” in Condition 4.6 was replaced with “good engineering practices” based on

comments made by EPA on another operating permit.

As discussed under the TEG units above, the source had submitted an initial notification indicating that the facility was major for HAPS and subject to the Natural Gas Transmission and Storage MACT (40 CFR Part 63 Subpart HHH). However, the source has since demonstrated that the facility is actually a minor source of HAPS and therefore, the provisions in 40 CFR Part 63 Subpart HHH do not apply.

#### Section II.5 – Fugitive VOC Emissions from Equipment Leaks

- Removed Condition 5.2.4 (requirement to submit a KKK applicability report) since the report was submitted as required by the original permit.
- Added the construction permit number in the citation for Condition 5.1 and 5.2.
- No VOC emission limits were included in the current operating permit, since the estimated VOC emissions were below the permitted emissions (4.5 tons/yr) and APEN de minimis levels (2 tons/yr). Although estimated emissions from this unit are below APEN de minimis levels, an APEN is still required for this emission unit since the fugitive VOCs are subject to the provisions of NSPS KKK. The Division will not require the source to calculate emissions on a specified frequency or specify a calculation methodology but will include a condition in the permit to calculate VOC emissions as necessary for purposes of APEN reporting and payment of fees.

#### Section II.6 – Smart Ash Incinerator

- Changed the equation in Condition 6.1 to get results in units of “tons/mo” rather than “lbs/mo”.
- Made some minor revisions to the language in Condition 6.3.
- In addition, removed the phrases in Conditions 6.5 and 6.6.3 that stated that the source “will certify annually” that certain requirements are met. This statement implies that a separate certification statement is required for these specific conditions and requiring a separate certification was not the Division’s intent. The annual certification (Appendix C) required by the operating permit will serve as the compliance indicator that no radioactive or hazardous wastes are burned in the incinerator (Condition 6.5) and the requirement to maintain and operate the unit in accordance with the manufacturer’s requirements (Condition 6.6.3).
- Added language indicating that the NSPS general provisions (Condition 6.7) are state-only, since the incinerator is only subject to NSPS

provisions in Colorado Regulation No. 6, Part B.

- The opacity standard (Condition 6.8) was rewritten to more closely resemble the language in Regulation No. 1.

### Section III – Permit Shield

- The citation in the permit shield was corrected. The reference to Part A, Section I.B.43 was changed to Part A, Section I.B.44 and the reference to Part C, Section XIII was changed to Part C, Section XIII.B.
- Based on comments made by EPA on another permit, the following phrase was added to the beginning of the introductory sentence “Based upon the information available to the Division and supplied by the applicant”.
- In addition, the following phrases “This shield does not protect the source from any violations that occurred prior to or at the time of permit issuance. In addition, this shield does not protect the source from any violations that occur as a result of any modification or reconstruction on which construction commenced prior to permit issuance” were added to the end of the introductory paragraph in Section 1.
- Based on comments made by EPA on another permit, the shield for the PSD review requirements has been removed from the permit. EPA indicated that the Division could not grant the shield for PSD review requirements, unless the source was an existing source prior to August 7, 1977. According to the information available to the Division, the equipment at this facility was first installed in 1979.

### Section IV - General Conditions

- Added an “and” between the Reg 3 and C.R.S. citations in General Condition 3 (compliance requirements).
- Added language from the Common Provisions (new condition 3). With this change the reference to “21.d” in Condition 20 (prompt deviation reporting) will be changed to “22.d”, since the general conditions are renumbered with the addition of the Common Provisions.
- Removed the upset and breakdown provisions from Condition 4 (emergency provisions) since they are included in the Common Provisions.
- The citation in General Condition 7 (fees) was changed to cite the Colorado Revised Statute. In addition, any specific identification of a fee (i.e. \$100 APEN fee) or citation of Reg 3 was removed and replaced with

the language "...in accordance with the provisions of C.R.S. [appropriate citation]."

- The phrase "Part A" was added to the citation for Condition 13 (odor). Colorado Regulation No. 2 was revised and a Part B was added to address swine operations. Colorado Regulation No. 2, Part B should not be included as a general condition in the operating permit.
- The citation in General Condition 16 (open burning) was revised. The open burning requirements are no longer in Reg 1 but are in new Reg 9. In addition, changed the reference in the text from "Reg 1" to "Reg 9".
- Added the requirements in Colorado Regulation No. 7, Section V.B (disposal of volatile organic compounds) to General Condition 28.

### Appendices

- First Page of Appendices – The phrase "except as otherwise provided in the permit" was added after the word "enforceable" in the disclaimer at the request of EPA.
- Revised the description in Appendix A of the insignificant activity category for the emergency power generators (Reg 3, Part C, Section II.E.3.nnn).
- Added the new emergency generator, identified in the May 23, 2003 comments on the draft permit to the insignificant activity list in Appendix A.
- Based on information in the May 23, 2003 comments on the draft permit, removed the south condensate tank from the insignificant activity list in Appendix A of the permit. For the north condensate storage tank, Appendix A was revised to indicate that the category of insignificant activity is "units with emissions less than the APEN de minimis – criteria" and "condensate truck loading" was included as an insignificant activity in that same category in Appendix A.
- Appendix B and C were replaced with revised Appendices.
- The EPA addresses in Appendix D were corrected.
- Removed Appendix G (NSPS KKK Example Report Format). Note that with removal, Appendix H (NSPS KKK Applicability Report) is renumbered as Appendix G.